F1-087

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

July 25, 1997

Planning Division

Ms. Kate Hansel
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

Dear Ms. Hansel:

The Corps of Engineers fully supports efforts by the Lake County Sanitation District to restore the ecological health of the Clear Lake basin. The Clear Lake improvement project would restore habitat for aquatic and riparian dependent species supported by California's largest freshwater lake. The project would also improve water quality in Clear Lake, the Sacramento River, and the Bay-Delta, by reducing nutrient and sewage inflow, as well as the spread of hydrilla.

The Corps has conducted many studies within the Clear Lake Basin, a major sub-watershed of the Sacramento River Basin, and has been given the authority by Congress to provide additional technical, planning, and design assistance to non-Federal interests for watershed management, restoration, and development, and to participate in the development and implementation of projects that will improve the quality of the environment by restoring and protecting aquatic ecosystems. We look forward to working further with you and Lake County to implement this project.

Sincerely,

Walter Yep
Chief, Planning Division

Copy Furnished:

Mr. Mark Dellinger, Lake County Sanitation District, 230A Main Street,
Lakeport, California 97453

I-001996

532 (4m) F1-087

CALFED Proposal

1. EXECUTIVE SUMMARY

Project Title

Wastewater Removal from Clear Lake and Wetlands Creation/Hydrilla Reduction

Applicant

Lake County Sanitation District

Project Description and Primary Biological/Ecological Objectives

Construction of wastewater treatment and effluent disposal facilities to eliminate untreated sewage discharges into Clear Lake, and construction of wetlands around the lake as part of a comprehensive program to restore the basin's ecological health. The project's primary biological/ecological objectives include:

1. Elimination of the last untreated sewage discharges into the Bay-Delta system.
2. Replacement of lost wetland habitat for migratory birds.
3. Reduction of the threat of hydrilla invading into the lower Bay-Delta system.

Approach/Tasks/Schedule

The project is using a fast-track approach because of the urgency of eliminating untreated sewage discharges to Clear Lake. Based on work already accomplished in a previous phase, the project schedule includes:

1997	• Construction of effluent disposal facilities & pilot wetland • Design of remainder of wastewater facilities • Design of additional created wetlands
1998	• Continued wastewater facility construction • Design finalization of remaining components
1999	• Continued construction
2000	• Construction completion

Justification for Project and CALFED Funding

Clear Lake, California's largest freshwater lake completely within the state border, continues to threaten the Bay-Delta with contamination from treated and untreated sewage overflows and resulting nutrient increases, along with the spread of hydrilla. In addition to these regional stressors, the local watershed's ecological health is declining from the same stressors, as well as

from related urbanization and decreased water quality. Over the years, over 85% of the Clear Lake Basin's wetlands, which remove nutrients and excessive minerals, have been lost. Addressing these problems will substantially improve habitat conditions for one of the state's significant migratory bird populations. Clear Lake is ecologically interconnected to and at the headwaters of the Bay-Delta. The Bay-Delta Program will only be successful to the extent it can be geographically comprehensive.

Budget and Third Party Impacts

Stakeholders in Lake County have a track record of assembling public/private partnerships to undertake projects such as this, and CALFED is seen as a logical partner in the next phase of basin improvements. Requested CALFED funds of $4 million represents 15% of the total project budget using combined local, state, and federal sources.

No third party impacts are anticipated from the project beyond the generalized benefits of an ecologically healthy watershed for all stakeholders.

Applicant Qualifications

The Lake County Sanitation District (LACOSAN) is a special service district operated by Lake County, California that provides wastewater services countywide. The district is governed by a board of directors, who also serve as the County's Board of Supervisors. LACOSAN operates two regional wastewater systems and two sub-regional systems, with a workforce of 40 employees and an annual budget of approximately $5 million. The agency has over 25 years of experience administering state and federal financial assistance for capital improvement projects.

Monitoring and Data Evaluation

Extensive monitoring of Clear Lake water quality is conducted in an ongoing manner by Lake County and cooperating state resource organizations. Special emphasis will be placed on monitoring at the recapture reservoir and proposed created wetlands at the Northwest Treatment Plant located in the Lyons Creek Watershed of zclear Lake.This effort will continue following project completion, and is expected to fully document the effects of the project.

Local Support/Coordination/CALFED Compatibility

A hallmark of Clear Lake improvement projects is the longstanding tradition of interagency cooperation. Approximately a dozen local, state, and federal agencies are currently active members of the Lake County Coordinating Resource Management Committee. The preceding phase of the basin's improvement program used a partnership of 11 local, state, and federal agencies with private corporations to partially eliminate sewage discharges through effluent injection for geothermal power generation. This request for CALFED funding is entirely consistent with the County's team approach to innovatively solving resource problems.

2. TITLE PAGE

Project Title

Wastewater Removal from Clear Lake and Wetlands Creation/Hydrilla Reduction

Applicant

Lake County Sanitation District

Organization Type and Tax Status

Local government special service district, not taxable.

Tax Identification Number

95-6000825

Technical and Financial Contact

Steve Brodnansky, Project Director
Mark Dellinger, Project Manager.
Telephone: 707/263-2273

Participants/Collaborators in Implementation

One dozen local, state, and federal agencies, and private for-profit and non-profit organizations that constitute the Lake County Coordinating Resource Management Committee. An itemized list of participants/collaborators is attached to this proposal.

RFP Project Group Type(s)

Construction.

3. PROJECT DESCRIPTION

Project Description and Approach

The project includes construction of the following major components:

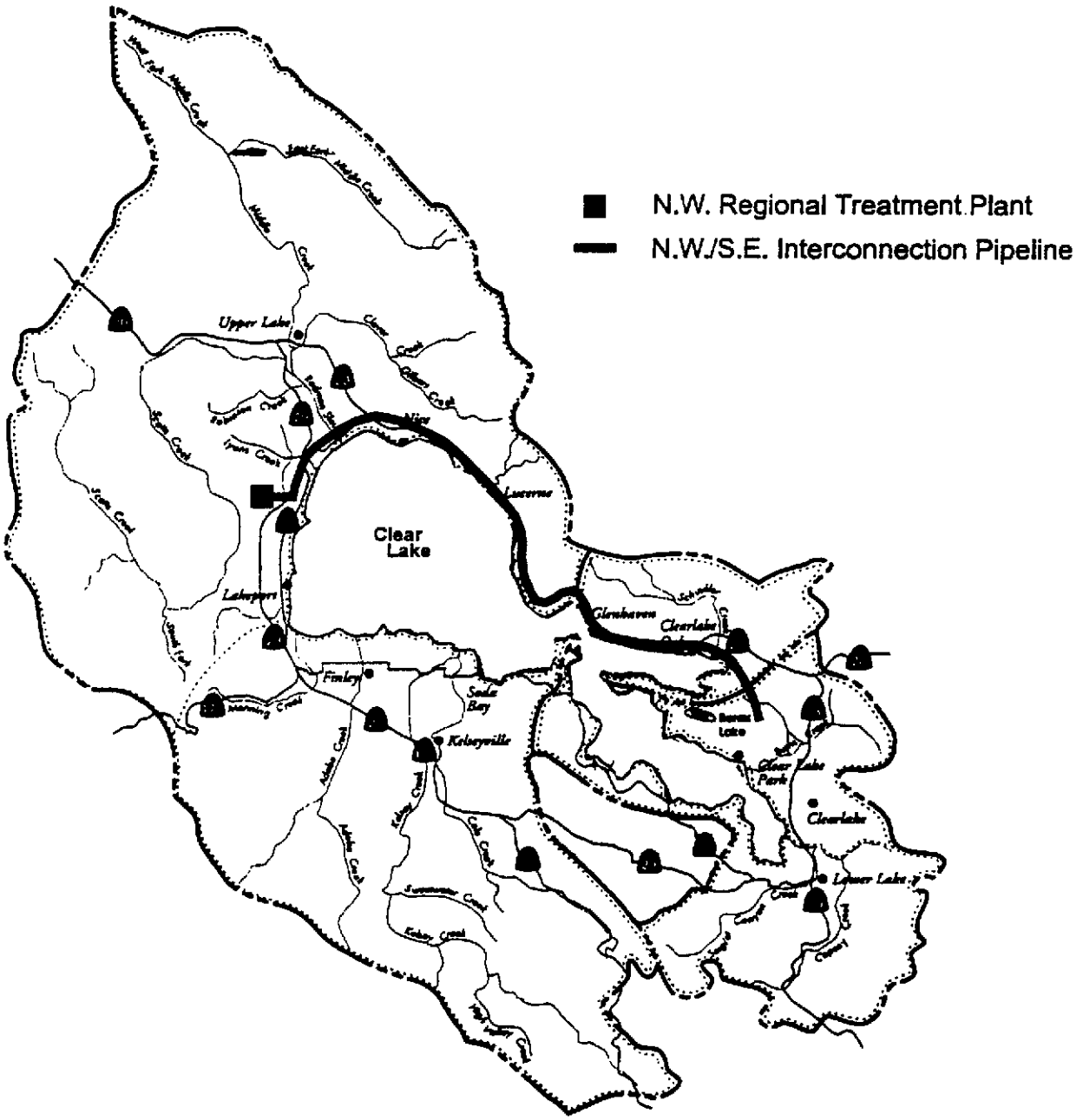
- Increased treatment capacity at LACOSAN's northwest regional wastewater treatment plant and collection system improvements to prevent hydraulic overloading and treated and raw sewage discharges to Clear Lake. This effort, in coordination with other basin-wide measures to reduce all sources of nutrients will limit hydrilla growth.
- Effluent flow control and disposal pipeline for basin-wide effluent disposal at created wetlands to reduce nutrient levels and improve migratory bird habitat and overall watershed ecological health.

The project is being implemented in a fast-track manner that will initially include construction of components already designed, along with design and subsequent construction of remaining components.

Location

The project location in relation to the Clear Lake watershed is shown in Figure 1.

Figure 1
PROJECT LOCATION
(in relation to Clear Lake watershed)



Expected Benefits

The project's expected benefits include:

Habitats	
Seasonal and perennial wetland habitat	Creation of 90 acres initially; additional acreage in subsequent phases.
Priority Species	
Migratory birds	Creation of wetlands-establishment of breeding and nesting habitat for migratory birds/waterfowl.
Stressors	
Water quality contaminants	Elimination of untreated sewage discharges, and consequent nutrient reduction.
Reduced hydrilla threat	Elimination of sewage nutrient encouragement of hydrilla
Urbanization of wetland habitat.	Creation of replacement habitat

Background and Biological/Technical Justification

The need for the project stems from three major problems: 1) Clear Lake's declining water quality; 2) declining migratory bird habitat/loss of wetlands; and 3) increasing hydrilla threats. A primary contributor to these problems is the nutrient loading of Clear Lake from treated and untreated sewage discharges that now reach into the millions of gallons annually because of hydraulically-overloaded wastewater facilities. The problem of nutrient loading from these facilities was identified in "The Causes and Controls of Algal Blooms in Clear Lake", Clean Lakes/Diagnostic Feasibility Study, 1994. In terms of alternatives, there are no other practical means of eliminating treated and untreated sewage discharges other than upgrading the wastewater facilities to accommodate the larger flows as the result of planned population growth. These sources of contamination will continue unless they are addressed in a comprehensive watershed manner at the headwaters of the Bay-Delta system.

The project is the second phase of an ongoing County effort to improve the overall ecological health of the watershed. The first phase, conducted during 1990-97, included a $45 million cost-shared upgrade to the County's southeast regional wastewater system to eliminate untreated sewage discharges at the east end of Clear Lake. The current proposal for a second phase to be conducted during 1997-2001 is focused on elimination of remaining treated and untreated sewage discharges, including those from the County's northwest regional wastewater system at the west end of the Lake, and the Clearlake Oaks County Water District wastewater system discharges on the north shore.

Proposed Work Scope

The project will be accomplished according to the following major tasks:

1. ***Northwest treatment plant upgrades.***

   1.1 *Initiate construction of fast-track items*

   1.2 *Design and construction of remaining items*

2. ***Construct pilot wetlands***

   2.1 *Initiate construction of pilot wetland at northwest plant*

   2.2 *Monitor and evaluate wetland performance*

3. ***Northwest/Southeast interconnection pipeline***

   3.1 *Design pipeline*

   3.2 *Construct pipeline*

   3.3 *Connect habitat sites*

4. ***Construct wetlands***

   4.1 *Design remaining wetlands*

   4.2 *Construct remaining wetlands*

   4.3 *Monitor and evaluate wetland performance*

5. ***Overall monitoring evaluation***

   5.1 *Clear Lake water quality (nutrient levels)*

   5.2 *Hydrilla status*

   5.3 *Migratory bird population at constructed wetland sites*

Monitoring and Data Evaluation

The project will be integrated into ongoing monitoring of Clear Lake that is being conducted by the basin's interagency resource management committee. This effort, which includes extensive peer review, takes regular periodic readings of nutrient and other quality parameters throughout the watershed. Additionally, the Lake's hydrilla population is closely monitored and documented, including the proximity of hydrilla to Clear Lake's Cache Creek discharge to the lower Bay-Delta system. In addition, water quality at created wetland sites will be monitored.

Implementability

As the second phase of a multi-year program underway since 1990, the project is considered to be highly implementable. The applicant has already prepared an environmental impact report for the project, and is in compliance with all applicable laws and regulations needed to promptly initiate construction.

4. BUDGET & SCHEDULE

Budget

The project's overall budget is shown in Table 1. Of this $26 million total budget, the requested CALFED share is $4 million (or approximately 15% of the total). The CALFED funds will be applied to facility construction costs shown in Table 1. Of the $4 million requested in CALFED funds, approximately $525,000 can be immediately expended for portions of the proposal that are ready for construction. The remainder of needed funds will come from the following sources:

	$ Million
LACOSAN ratepayers	8
California Water Resources Control Board	3
U.S. Economic Development Administration	3
U.S. Environmental Protection Agency	5
Corps of Engineers	3

The applicant will be completely responsible for operation and maintenance costs following project construction.

Table 1
PROJECT BUDGET

Project Component	$ Million			
	Collection System	Treatment Plant	Interconnection Pipeline	Total
Administrative expenses	0.03	0.06	0.08	0.17
Land, structures, ROW, easements	0	0	0.3	0.30
Relocation & incidental costs	0	0	0	0.00
A/E fees & inspection	0.4	1.32	2.2	3.92
Construction	1.7	7.1	10.3	19.10
Contingencies	0.2	0.9	1.3	2.40
Total	2.33	9.38	14.18	25.89

Of the $4 million requested in CALFED funds, approximately $525,000 can be immediately expended for portions of the proposal that are ready for construction.

Schedule

The project's schedule is as follows:

Tasks	Start Date	Completion Date
1. Northwest treatment plant upgrades.		
1.1 Initiate construction of fast-track items	11-97	7-98
1.2 Design and construction remaining items	11-97	6-99
2. Construct pilot wetlands		
2.1 Initiate construction of pilot wetland at northwest plant	11-97	5-98
2.2 Monitor and evaluate	5-98	Ongoing
3. Northwest/southeast interconnection pipeline		
3.1 Design pipeline	11-97	6-98
3.2 Construct pipeline	6-98	10-99
3.3 Connect habitat sites	5-99	10-99
4. Construct wetlands		
4.1 Design remaining wetlands	10-98	4-99
4.2 Construct remaining wetlands	4-99	10-99
4.3 Monitor and evaluate	10-99	Ongoing
5. Overall monitoring evaluation		
5.1 Clear Lake water quality	10-99	4-99
5.2 Hydrilla	10-99	10-99
5.3 Migratory bird population	10-99	Ongoing

Third Party Impacts

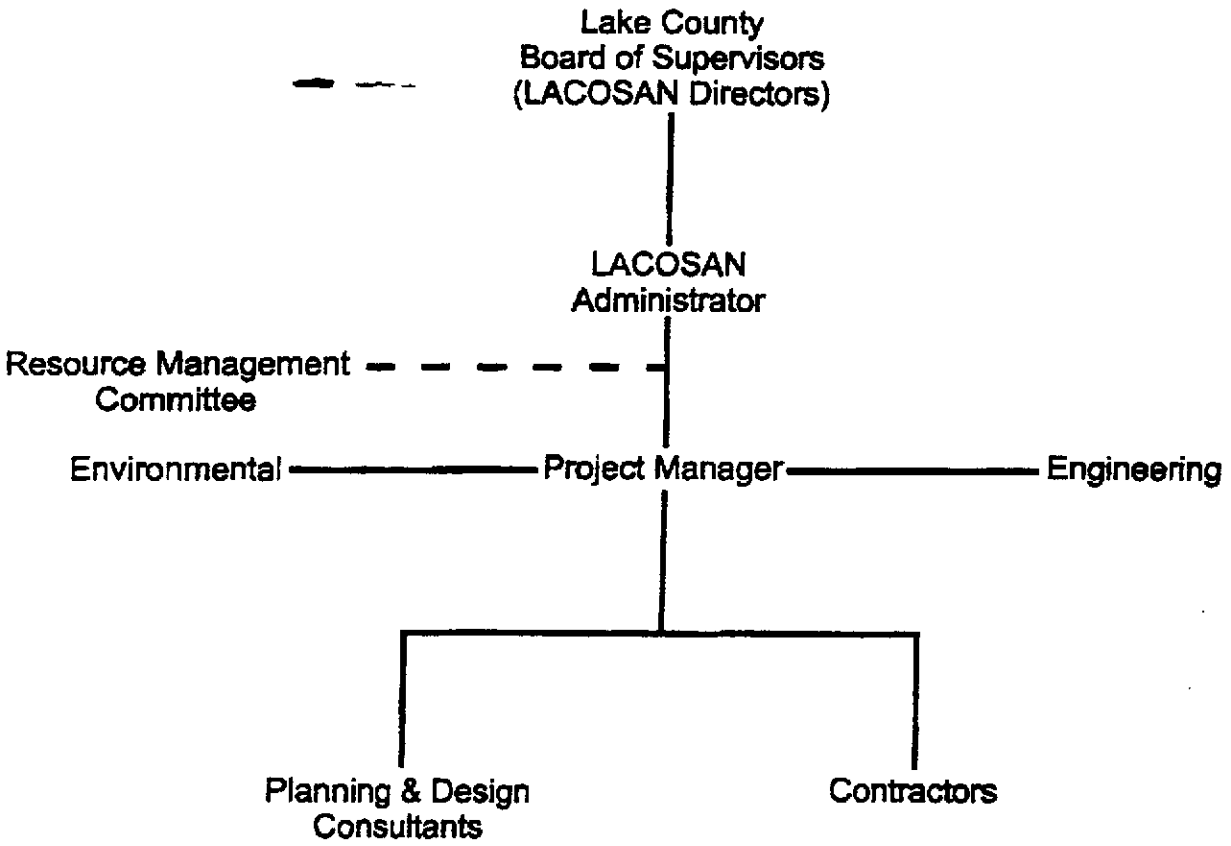
No substantial third party impacts are expected from the project beyond the generalized benefits of improved ecological health for all watershed stakeholders.

5. APPLICANT QUALIFICATIONS

The Lake County Sanitation District (LACOSAN) is a special service district operated by Lake County, California that provides wastewater services countywide. The district is governed by a board of directors, who also serve as the County's Board of Supervisors. LACOSAN operates two regional wastewater systems and two sub-regional wastewater systems, with a workforce of 40 employees and an annual budget of approximately $5 million. The agency has over 25 years of experience administering state and federal financial assistance for capital improvement projects.

Project staff will include the LACOSAN Administrator, Steve Brodnansky, a senior County manager with over 25 years of experience directing capital improvement projects. The project manager will be Mark Dellinger, a senior County project manager with over 15 years of experience in capital improvement projects focused on environmental protection and restoration. LACOSAN will retain, through competitive selection, qualified planning and design consultants and contractors to execute the work program. Figure 2 describes the project's management organization.

Figure 2
PROJECT MANAGEMENT ORGANIZATION



6. TERMS & CONDITIONS COMPLIANCE

The applicant has reviewed all CALFED terms and conditions, and finds all of them to be agreeable.

Attachment 1

LAKE COUNTY COORDINATING RESOURCE MANAGEMENT COMMITTEE

Project Participants/Collaborators

Lake County

Sanitation District
Flood Control & Water Conservation District
Community Development Department
Public Works Department
Environmental ~~Health Department~~

Citizens Groups

Rimlanders
Audubon Society
Friends of Cobb
California Lake Management Society
Lake County Land Trust

Special Districts

Mendocino Resource Conservation
Napa Resource Conservation District
Yolo County Resource Conservation District
Yolo County Flood Control & Water Conservation District
Solano County Flood Control & Water Conservation District
Napa County Flood Control & Water Conservation District

City of Lakeport

City of Clearlake

State Agencies

Department of Fish and Game
Department of Health Services
Department of Water Resources
Department of Conservation
Department of Parks & Recreation
Regional Water Quality Control Board
State Lands Commission

Federal Agencies

Bureau of Land Management
Corps of Engineers
Environmental Protection Agency
Forest Service
Natural Resource Conservation Services
Consolidated Farm Service Agency
Bureau of Indian Affairs

Education

Mendocino Community College
Yuba Community College
Lake County Office of Education

University of California

Cooperative Extension
Institute of Ecology, Davis
U.C. Berkeley

Tribal Councils

Big Valley Band of Pomo Indians
Big Valley Rancheria
Middletown Rancheria
Lower Lake Rancheria
Robinson Rancheria
Scotts Valley Band of Pomo
Elem Indian Colony of Pomo Indians
Upper Lake Rancheria

Attachment 2

MIGRATORY BIRDS OF THE CLEAR LAKE WATERSHED

Loons:
- Red-throated Loon
- Arctic Loon
- Common Loon

Grebes:
- Horned Grebe
- Red-necked Grebe
- Eared Grebe
- Western Grebe

Albatrosses:
- Black-footed Albatross

Pelicans & Cormorants
- White Pelican
- Double-crested Cormorants

Herons & Bitterns:
- American Bittern
- Least Bittern
- Great Blue Heron
- Great Egret
- Snowy Egret
- Green-backed Heron
- Black-crowned Night Heron

Ibises:
- White-faced Ibis

Cranes:
- Sandhill Crane

Swans:
- Trumpeter Swan
- Tundra Swan

I-002013

(Migratory Birds - Continued)

Geese:

- Brant
- Greater White-fronted Goose
- Snow Goose
- Ross' Goose
- Canada Goose

Ducks:

- Wood Duck
- Green-winged Teal
- Mallards
- Northern Pintail
- Blue-winged Teal
- Cinnamon Teal
- Northern Shoveler
- Gadwall
- European Wigeon
- American Wigeon
- Canvasback
- Redhead
- Ring-necked Duck
- Greater Scaup
- Lesser Scaup
- White-winged Scoter
- Surf Scoter
- Common Goldeneye
- Barrow's Goldeneye
- Bufflehead
- Hooded Merganser
- Common Merganser
- Red-breasted Merganser
- Ruddy Duck